The Chemical Age

A Weekly Journal Devoted to Industrial and Engineering Chemistry

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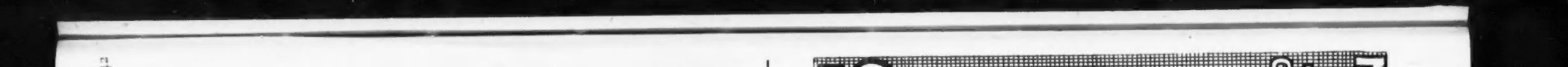

The Chemical Age

A Weekly Journal Devoted to Industrial and Engineering Chemistry

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Insecticides

IF weight of numbers were sufficient to win a war the human race would have been extinguished by insects long ago. It is not a conscious war. It is just part of Nature's struggle for survival. It happens that insects in great numbers inhabit tropical countries and desire to feed on man and on animals used by man; man resents being eaten alive and so endeavours to protect himself. These same insects may carry deadly disease germs and thus may be dangerous as well as uncomfortable, both to man and beast. If the solution lies in exterminating the insect, man has no compunction in declaring a war of extermination and bringing all the resources of scientific research to bear upon the problem. The most general point of controversy between men and insects, however, lies in the desire of certain classes of insects to feed off the same food as man, or off plants that are of economic importance to him. Nothing rouses a man to action more quickly than to hit him below the belt—whether in his stomach or his pocket. Thus there is, on the side of deleterious types of insect, the struggle to survive, unfortunately for them at the expense of man; while on the side of man there is a struggle to gain control of insects, which can only be done effectively by destroying them.

The address on insecticides given to the London Section of the Society of Chemical Industry by Mr. G. A. Freak was primarily concerned with the control of insects on vegetation and animals. In addition to an excellent survey of the subject by the speaker, the discussion yielded much of interest on the future development of insecticide research. Insecticides may be classified as contact poisons, of which nicotine is an example, and stomach poisons, such as lead arsenite, though the distinction is not always a hard and fast one. One of the most important features of insecticides is the small margin of safety between the concentration necessary to kill the insects or parasite and the maximum concentration which can be used without harming the host, whether plant or animal. It has been suggested that a fundamental distinction between medical research and insecticide research is that if in medical research a drug can be found which is even ever so slightly safer in use, that drug will be employed in preference to those which result in a slightly higher mortality rate. In insecticide research, mortality among plants and animals is of much less consequence; the criterion here is economic: is the additional cost of the new drug or insecticide so great as to counterbalance a somewhat lower mortality rate? This all revolves again round the factor of safety and it appears that research must to some extent concentrate on increasing the safety margin without unduly increasing the initial cost either of material or mode of application.

It will not be forgotten that many chemicals have been manufactured for use as drugs, etc., that were initially exceedingly expensive, but once the demand has been established the cost of production has fallen drastically. This leads to the discussion of chemical synthesis as a factor in insecticide research. It is a curious fact that most of the insecticides in regular use have been known and utilised for that purpose for a long time. Of some the use extends back over 200 years or so; others may have been introduced in the latter half of the 19th century; only a few appear to have been discovered during the last 50 years. Most common inorganic substances have probably been tried by accident or design, and it is to organic chemistry, and particularly to synthetic organic chemistry, that research workers in this field should increasingly turn their attention. The recent paper on "Fine Chemicals" by Dr. Durrans has indicated vast developments in this field. Our suggestion is that insecticide chemists should dig in the same ground. A fundamental difficulty, of course, is the economic stumbling block. Synthetic organic chemicals may not be cheap to produce, especially at first. Insecticides, however, must be applied on a large scale and with a relatively low efficiency per unit used. Their cost per ton must therefore be limited by the saving produced by use.

The difficulty of investigation is immensely increased by the high cost of research. Pure laboratory research is invaluable, indeed essential, but it is not in itself sufficient. Research under defined and controlled conditions on insects reared under defined and controlled conditions may give quite different results from large scale application in Nature where conditions are neither defined nor controllable. Laboratory research must, therefore, be supplemented and confirmed by field research extending over several years. This may involve long journeys, often overseas into unhealthy and dangerous places. The cost is far greater than private firms, universities, or research associations can meet. International Government-sponsored research seems the only way to tackle the problem. Governments, however, do not of their own volition tackle difficult problems, nor engage in research unless they are forced to do so by public opinion or when an overwhelming case can be made out. It is for the agriculturalists, the food industry, and other interests concerned, to lead the way.

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NOTES AND COMMENTS

U.S. Grants for Research

RESEARCH is receiving a strong impetus in the United States, with fellowships being freely distributed by several notable firms. E. I. du Pont de Nemours and Co., Inc., have announced the award of six post-doctorate fellowships, each worth $2000, and 22 post-graduate fellowships for research in chemistry, during the academic year 1942-43. The post-graduate fellowships are valued at $750. A post-graduate fellowship in chemical engineering, as well as one in chemistry, will be awarded this year at Massachusetts Institute of Technology, and in all 21 institutions will benefit. The University of Pittsburgh has received from Swift and Co., Chicago, a grant for the year 1941-42 in support of fundamental research on the chemistry of fats and oils. Studies of the properties and molecular structure of synthetic fats have been under way for a number of years at the university, under the direction of C. G. King in the Department of Chemistry. During the past two years, with the support of the Buhl Foundation, the work has been extended to include physico-chemical and biochemical studies. An earlier grant of $1500 a year for research on the principles of nutrition will be continued by the same firm during 1941-42. Finally, it has been recently announced that the John Wesley Hyatt Award, newly established by the Hercules Powder Co., will be a gold medal and $1000 presented each year to the person rendering the most distinguished service in the field of plastics.

Organising War Production

GRAVE criticism continues to eminate from prominent industrialists concerning the output of munitions. A gathering of industrialists in London on Thursday last week advanced the demand for a Ministry of Production and the setting up of regional boards and district committees to control all phases of manufacture. Production is described in a statement which was issued as being all "hand-to-mouth and muddle." The statement goes on to say that beyond any doubt "a very large body of expert management and labour opinion in the nation is profoundly dissatisfied with the scale of current war production. The industrial resources of the nation are operated by perhaps 100,000 firms. A few dozen of these are great concerns whose size and importance keeps the Government administration in close and sympathetic contact with them. They are probably operating well and efficiently to their practical capacities. But the same cannot be said of the great bulk of industry. It is impossible for a central Government administration to be in intimate touch with scores of thousands of dissimilar enterprises." It is pointed out that under the existing system there are no less than six ministries competing for supplies. Schemes have been drawn up by experts for accelerating the war output and all utilise the idea of regional boards and district committees. These would endeavour to guide industry not by "avalanches of paper," but by personal contact with the factories. The final remarks of the statement deserve the profoundest attention. "The control of industry must be exercised on industry by its own leaders. The technique of modern mass manufacture demands from its practitioners a close and exact application to detail as well as a scientific and practical education. Its complexities and idiosyncrasies can never yield good results to remote clerical control on a grand scale. The industrial body of the nation is afflicted with a lassitude due primarily to partial starvation arising from lack of a planned flow of orders. The illness will not yield to the bromides of oratory, nor will it be cured by pretending it does not exist."

French Stocks of Non-Ferrous Metals

RECENTLY we published a note on the position of the French dyestuffs industry under German control. An article in *Foreign Commerce Weekly* sheds further light on the plight of French industries generally, especially those depending on supplies of the non-ferrous metals. Reserves of non-ferrous metals, supplemented by stocks from Germany for orders from that country, are, however, in a better position in occupied France than in the unoccupied zone, where aluminium is finding more and more use in replacing other metals. But not more than 30 to 40 per cent. of the output is available for home consumption. In August, the output was 5000 tons, and the average monthly rate is expected to be in the region of 6000 tons, increasing to 7000 tons in the spring. The monthly average in 1938, the latest year for pre-war figures, was about 3750 metric tons. Cotton stocks are almost exhausted and deliveries of German rayon are naïvely described as being "below expectations"; this, combined with a shortage of pulp and the necessary chemicals is restricting rayon output in the unoccupied zone. Metallurgical plants, by calling on reserve stocks, have maintained a moderate output and are said to be operating at 20 to 30 per cent. of normal production. A house-to-house collection of all non-ferrous metals except aluminium and zinc has been ordered, and in this way it is hoped to gather some 20,000 to 30,000 tons of copper.

Wholesale Prices in 1941

WHOLESALE prices of industrial materials and manufactures in December, 1941, showed a slight all-round increase over the November figures, amounting to a percentage increase of 0.1. The Board of Trade index number for chemicals and oils rose from 129.2 to 129.7 (1930 = 100); iron and steel resumed an upward trend, moving from 181.4 to 181.7; while non-ferrous metals showed their first increase since last March, with a 0.3 per cent. rise to the figure of 124.1. This leaves them still slightly lower than the figure obtaining in last March and April. Over the whole year, the industrial group stood 5.3 per cent. higher than at the close of 1940 (as against a 4.2 rise in the food group), but compared with the prices at the outbreak of war, industrial materials and manufactures have risen only 55.0 per cent. in contrast with a 66.5 per cent. increase in the food group. It is interesting to note that, within the 55 per cent. rise in industrial materials, manufactured articles are only 38.3 per cent. higher, whereas basic materials show an increase of 80.4 per cent. in cost. Striking increases in price among chemicals and oils for the year include 31 per cent. for varnish, 16½ per cent. for fuel oil, 7½ per cent. for sulphuric acid, and 7 per cent. each for paint and burning oil. A small decrease of 1½ per cent. was recorded for fertilisers. The total rise in chemicals and oils amounted to 5.8 per cent. over December, 1940, and 39.5 per cent over August, 1939.

Plans for the construction of a synthetic ammonia plant, financed by the Defence Plant Corporation, at Chute, near Freeport, Texas, are being prepared by the engineers of the Dow Chemical Co. Contracts for the construction have already been awarded; the cost of the plant will be about $11,000,000 and it will occupy a site of 1500 acres. Natural gas will be used as a raw material.

Auxiliary Motors and Control Gear

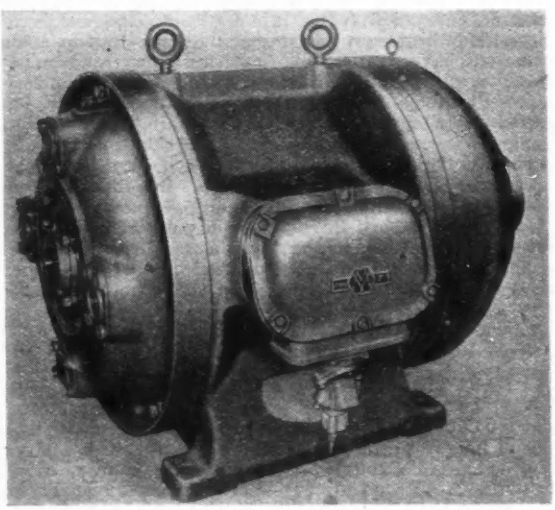
Improvements and Output Maintained by Metrovick

DURING 1941 the mechanical department of Metropolitan-Vickers Electrical Co., Ltd., has inevitably diverted its usual development activities to those of production of more standardised products. A number of the larger and more special turbo sets carried over from an earlier period have been put into useful operation and there has also been a flow from the factory of many smaller sets of the well-known self-contained type. While present conditions are inopportune for development on a large scale in turbo-alternator plant, improvements in detail are continually being made and incorporated in new plant. One such item is the improved governor valve of the Venturi type employed with the higher steam conditions.

The condenser section of the department has shown progress comparable with that of turbine plant and, as has been the case for many years, practically all condensing turbines made are provided with the company's condensers and condenser auxiliaries, including feed heaters, evaporators, ejectors, and extraction pumps, while coolers have been made for the company's turbo-alternators and other electrical plant.

Numbers of large motors of the A.I. type have been manufactured and ordered during the year, both induction and synchronous induction. A notable development has been "filter" ventilated motors, for operation in dirty atmospheres. In these cases, the air enters the motors through filters of the cellular oil film type and exhausts through a louvred opening, the louvres automatically closing when the motors shut down, thus preventing the entry of dirt. Synchronous induction motors have also been built during the year, with the same scheme of ventilation.

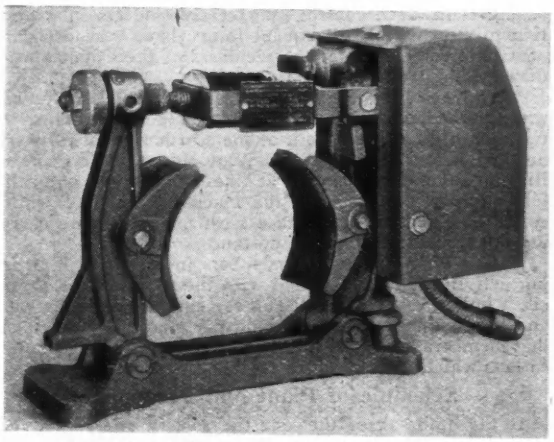
There has been a considerable volume of orders for medium and small a.c. motors for such drives as compressors, pumps, ventilating fans, etc. Of these orders, a



A 250 h.p., 1800 r.p.m., 2200 volt flameproof slip-ring motor for oil refineries

proportion, unusually large when judged by normal standards, has consisted of machines duplicating those which have already been in service for a year or two.

Several orders for the company's special oil-refinery motors have been put into production during the year, indicating a steadily increasing demand for this type of machine. A complete line of flameproof motors is available either as squirrel-cage type or in the slip-ring form. They have been designed to conform to the British Standard Specification No. 229 for flameproof motors and are covered by Mines Department Certificates for Group II gases. These certificates cover motors which are intended to work in atmospheres containing petroleum or acetone vapours. A range of ratings from 2 h.p. to 1500 h.p. is available. In view of the dependence of oil refining processes on the satisfactory operation of any individual motor in the plant, generous allowances have been made in the design of such features as bearings, shaft size and feet of the type F machines. Except for the very small sizes,



Perigrip Brake (a.c.) with drip-proof cover

the motors are totally-enclosed, closed-air-circuit machines having two entirely separate air paths. A fan forces air through the external air circuit consisting of axial ducts in the stator laminations. Inside the flameproof enclosure a second fan causes the internal air to pass along cooling ducts formed between the stator punchings and the stator frame before returning again to the axial ducts in the rotor core.

The number of orders received for Perigrip brakes has remained at a high level comparable with that of the previous year. It is particularly gratifying to survey the list of repeat orders. Many of the attractive features associated with the design of Perigrip brakes will be appreciated at a glance at the illustration. For example, it will be seen that the shoes are pivoted and therefore self-aligning, while in the event of lining replacement being deemed necessary a spare shoe can be fitted in a matter of seconds; the original shoe being then re-lined at leisure. Normal adjustment to compensate for lining wear can be effected without the use of spanners or keys, but merely by rotating the knurled knob at the top of the lever arm. The design of the brakes is such that the value of torque exerted, with the brake on, is maintained over the whole range of permissible lining wear, a feature not always incorporated in this type of apparatus.

Among the numerous equipments manufactured during 1941 for rolling-mill requirements, one example, for the rolling of special alloys, covered six sets of 100 h.p. mills, which were grouped in threes so that one group could be run as a tandem mill, while the remainder operated as finishing mills, or the tandem mill switched over to individual running if desired. The contactor starters were built as units and mounted in a cubicle. Control of the mills was on the Ward-Leonard principle, with pistol-grip master control switches mounted on the control cabinet located conveniently for the operator. For tandem running, each mill is first run up to speed on its individual control switch, and the selector switch is then thrown over to the tandem position which puts the three machines under the control of one master control switch. Speed control is carried out on motor-operated rheostats connected in the generator field of each equipment.

Electrodepositors and the War

Dr. Wernick's Encouraging Report

AT the annual general meeting of the Electrodepositors' Technical Society held at the London headquarters last month, an interesting report covering the activities of the society during the 15th and 16th sessions was presented by the Hon. Secretary, Dr. S. Wernick. These sessions embrace the war period to September, 1941. At the outbreak of war, when considerable dispersal of members had taken place, one of the first acts of the Council was to form an Emergency Council charged with the task of formulating and carrying out policy covering all phases of the society's activities. The object of this step was to ensure centralised control by executive officers in a position to meet at fairly frequent intervals to take decisions at a time when most of the members of the Council were dispersed.

After November, 1939, when the first shock of the war was absorbed, evening meetings were held at approximately two-monthly intervals, both at the Northampton Polytechnic in London and the James Watt Memorial Institute in Birmingham. Attendances at these meetings naturally fell off, partly because of the black-out and bad winter conditions, and partly because most members were carrying out work of national importance.

With a view to keeping members informed of impending activities and acquainted with the views of the Council, a bulletin was published in the early days of the war, and this has been issued periodically since. It is evident that members approved the step, from numerous communications which were received by the hon. secretary

Schedule of Plant and Personnel

At the outbreak of the war the society offered its services to the Ministry of Supply in the compilation of a schedule of the plant and personnel covered by the society's membership. This offer was warmly welcomed and encouraged. A questionnaire was issued to members to obtain the necessary data and a good response resulted. The schedule was placed in the hands of the Ministry of Supply, since when requests have been received to supply this schedule to other Government departments, including the Admiralty and the Air Ministry.

An early decision made by the council was to encourage the publication of papers, as it was felt that the dissemination of published information which had proved so valuable in the past could not be less valuable under present conditions. The continued publication of the journal was bound to be helpful in connection with various aspects of war work carried out by members and their firms. There was unfortunately a dearth of papers submitted during the sessions and in consequence the new volume—Volume 16—suffered a reduction in size compared with its predecessors.

The beginning of the 16th session was marked by the most critical period which the civilian population of this country has ever known. As a result it was decided to cancel the opening meeting, which would normally have been held in September, 1940, and to abandon evening meetings *pro tem.* Nevertheless, the first meeting took place (during the afternoon) a bare month later. Then followed a gap of three months, corresponding to the intense "blitz" period, and the next meeting took place in January, 1941. Afternoon meetings gave way to evening meetings during the summer and, the dearth of new papers continuing, old papers were examined and further discussions of an interesting and practical type were held on topical subjects. It is hoped that by the end of the current session there will be sufficient matter to enable the Editorial Board to issue a further volume, and that, if the present "breathing spell" continues, the issue of publications may begin to approach the normal.

The December issue of Alloy Metals Review, published by HIGH SPEED STEEL ALLOYS, LTD., Widnes, Lancs., contains a number of abstracts of considerable interest to metallurgists.

American Strategic Minerals

Activities of the U.S. Bureau of Mines

IN the annual report of the United States Bureau of Mines to the Secretary of the Interior, Mr. Harold L. Ickes, Dr. Sayers, the Director, expresses the opinion that the discovery of new or additional domestic sources of supply of some of the strategic minerals, and development in the methods of treating some of the domestic low grade ores of metals vital to national defence must rank among the leading accomplishments of the Bureau for the 1941 fiscal year. Outstanding among the results of exploratory work undertaken in connection with antimony, chromite, manganese, mercury, tungsten, nickel and tin was the discovery of a high-grade deposit of tungsten ore in Idaho. This is now being rapidly prepared for commercial production. Another prospect yielding chromium ore is also being developed. In addition, experts of the Bureau have found deposits of antimony, mercury, and manganese ores which, although of lower grade, could become valuable in an emergency. Altogether more than 500 sources of strategic minerals were investigated.

Parallel with this work, the Bureau made strenuous efforts to develop methods of treating, for defence purposes, many of the low-grade native ores. A process for the electrolytic production of manganese of high purity was further improved, while investigation into the production of ferromanganese from the abundant, low-grade manganiferous ores of the country revealed the possibility that the United States might cease to depend on foreign sources of supply. The only helium plant in the world, operated by the Bureau of Mines, at Amarillo, Texas, increased its production to more than 16,250,000 cu. ft., of which 15,000,000 cu. ft. were used for defence and military purposes. The expansion of the plant and the drilling of more wells was undertaken during the year and is expected to expand the capacity to approximately 36,000,000 cu. ft. annually. As a further contribution to the defence programme the Bureau made a survey of the quantity and geographic distribution of crude oils suitable for the manufacture of aviation fuel. In addition to the metals of special significance at the present time, the Bureau made numerous investigations on materials such as bauxite, graphite, clays and high-temperature refractories. Possible substitutes for important materials, normally imported, were found in the cases of graphite, special clays, mica, bauxite, and kyanite.

The Bureau further developed its methods of extracting gasoline, lubricating oil, and other by-products from domestic coals; not that, as the report points out, the country faces any immediate shortage of petroleum products, but as a preparation for the day when the natural sources of petroleum may approach depletion.

Barytes in Canada

Nova Scotia Discovery Exploited

A BARYTES deposit recently discovered at Pembroke, Hants County, Nova Scotia, THE CHEMICAL AGE understands, is estimated to contain at least 420,000 short tons of barytes of a grade suitable for oil drilling, and an additional 321,000 tons probably within the required specifications. A mill has already been constructed, capable of treating 45,000 tons a year, which compares with the 330 tons produced in Canada in 1940. Two cargoes of barytes, each of approximately 2500 tons, have already been shipped to Trinidad for use in drilling oil wells, while another 250 tons have been despatched to Peru. For use in oil drilling, bartyes is ground and mixed with the circulating mud to increase its weight and aid in controlling gas pressure. So far, its use for such purpose is confined largely to wells where the pressures are above normal. Perhaps better known are its uses as an inert filler or in the rubber, paper, leather, and plastics industries, as a pigment, and as a paint extender.

The Nova Scotia property is owned by the Stringer Sturgeon Gold Mines, Ltd., and operated by its subsidiary, Canadian Industrial Minerals, Ltd.

Applications of Molecular Distillation, II

Vitamins D and E

by D. D. HOWAT, B.Sc., A.I.C., A.Inst.M.M., Ph.D.

(*Continued from* THE CHEMICAL AGE, *January* 17, 1942, *p.* 43)

MOLECULAR distillation has thrown valuable light on the question of the identities of the various antirachitic substances in cod-liver and tuna-liver oils, substances previously grouped together under the name vitamin D. Different varieties of this vitamin, referred to as D_2, D_3, and D_4, may be prepared by irradiation of ergosterol, 7-dehydrocholesterol and 22-dehydroergosterol respectively. Bills and collaborators[37] showed that the liver oils of different species of fish are unequally effective, per rat unit, for the prevention of rickets in chickens, experiments indicating the existence of more than one kind of vitamin D in the oils. Work by Windaus, who separated a modification known as D_3, has also proved the existence of different forms of this vitamin.

Vitamins in Fish-Liver Oils

Both vitamins A and D occur together in most fish-liver oils, the proportion varying considerably in different species. In molecular distillation of these oils, vitamin A, the more volatile of the two, distils off at a considerably lower temperature than vitamin D, the same relationship holding true in the case of the esters of the two compounds. Hickman[25] found that about 70 per cent. of the vitamin D in cod-liver oil is present in ester form. This contrasts with vitamin A, which appears almost 100 per cent. esterified.

In 1937 Hickman[22] showed that the elimination curve for vitamin D was of reproducible but unsymmetrical shape, suggesting a mixture of antirachitic bodies of more varied distillability than in vitamin A. (*See* Fig. 14).

In later work Hickman and Gray[25] examined and reported on the elimination curves of pure calciferol and of various fish-liver oils. The investigation proved that calciferol may be distilled unchanged from sterol-free oil, yielding an elimination curve of theoretical shape for a single substance with an exceptionally high latent heat of evaporation. The elimination maximum is 146° compared with 151° C. for diethylaminoanthraquinone. Saponified fish-liver oils were treated by molecular distillation, yielding elimination curves which convincingly attested the presence of several modifications of vitamin D. The existence of two distinct peaks and of four points of inflexion suggests the possibility of six different modifications. The two major modifications, present in almost equal potency, accounted for 70 to 80 per cent. of the rat potency of the oil. Two other vitamins are almost certainly present, one occurring in quite substantial amounts. The two remaining possible modifications are the highest and lowest boiling-point members, for whose existence there is less convincing proof.

The lowest-boiling fraction, distilling over at 90° to 100°, corresponds with the smallest antirachitic molecule that is likely to be found containing the cholane nucleus. Bills, Massengale, Hickman, and Gray[38] have carried out rat and chicken assays with this low-boiling modification of vitamin D. Their work verified the evidence previously obtained from molecular distillation that the cod-liver oil contained several modifications of vitamin D. It proved that, per rat unit, this low-boiling modification was from one half to one fourth as effective for chickens as the total vitamin D of the oil.

Vitamin E

In common with the others, this vitamin has been found to occur in at least three different modifications. The naturally occurring compounds are optically active, but the corresponding optically inactive substances have been synthesised. This vitamin occurs in wheat germ, rice, and cottonseed oils and may be concentrated by submitting these materials to molecular distillation, the active material concentrating in the low-boiling fractions.

Acknowledgments

The author would like to express his thanks to Mr. G. Burrows, Metropolitan Vickers Electrical Co., Ltd., and to Dr. F. H. Carr, Dr. T. H. Mead, and Mr. W. Jewell, the British Drug Houses, Ltd., for help and valuable criticism in the preparation of these articles. Dr. K. C. D. Hickman, Distillation Products Inc., Rochester, N.Y., U.S.A., very kindly supplied extensive data and papers relating to the work on molecular distillation carried on by himself and collaborators.

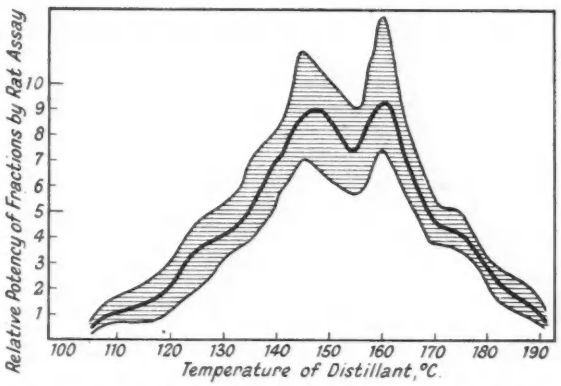


Fig. 14. Averaged elimination curve for whole cod-liver oil

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Personal Notes

MR. GEORGE W. HUGGETT has been selected to succeed the late Mr. Arthur Purvis as president of Canadian Industries, Ltd. He is a director of Canadian Lastex, Ltd.

LIEUT.-COL. B. J. EATON, O.B.E., has been appointed Secretary of the Research Association of British Rubber Manufacturers in succession to the late Mr. B. D. Porritt.

MR. CHARLES LATHAM, who has assumed the title of Baron Latham of Hendon, having been raised to the peerage in the New Year honours list, numbers the chairmanship of the London and Thames Haven Oil Wharves, Ltd., among his many industrial and other activities.

PROFESSOR GREGORY JAMIESON COMSTOCK has been appointed Professor of Powder Metallurgy at the Stevens Institute of Technology, Hoboken, New Jersey. This is the first appointment to a full professorship in powder metallurgy at any institution in the U.S.A. MR. EUGENE D. POLUSHKIN is to be associate professor and MR. THOMAS H. LASHER to be instructor in powder metallurgy.

MR ARTHUR SMITH has been made Assistant Rubber Controller in succession to Mr. Ascoli, whose appointment as Controller was announced in THE CHEMICAL AGE of January 17. Mr. Smith has been with Dunlop Rubber Co., Ltd., and the India Tyre and Rubber Co., Ltd., for the past 20 years and has had particular experience in the remoulding departments.

MR. GAVIN COWPER, who is already Director for Discards in the Iron and Steel Control, has assumed in addition the post of Director of Re-rolled Steel Products and Wrought Iron Products, in succession to MR. A. J. WESSON, who has retired (except for consultative purposes) from urgent private reasons. MR. E. HUGHES is appointed Assistant Director of Re-rolled Steel Products and Wrought Iron Products.

DR. HAROLD G. COLMAN'S retirement from the Refractory Materials Joint Committee of the Gas Research Board and the British Refractories Research Association, was the occasion last week of an informal luncheon with the presentation of books and a Bernard Moore vase. Dr. Colman's interests have embraced both organic and inorganic chemistry, represented respectively by tar and benzol and by refractories. He became F.I.C. in 1887 and took the D.Sc. degree at Manchester in 1908.

SIR WILLIAM J. LARKE, K.B.E., has been appointed Controller of Non-Ferrous Mineral Development in the United Kingdom. The Non-Ferrous Metallic Ores Committee, of which Sir William Larke is Chairman and which has, since March, 1940, been inquiring into means for increasing the production of non-ferrous ores, will continue its work and its advice will be available to the Controller. Sir William is director of the British Iron and Steel Federation: he assisted in the organisation of the Ministry of Munitions in the last war, and introduced the Priority of Work Order controlling munitions output.

THE RT. HON. WEDGWOOD BENN, whose elevation to the peerage was recently announced, has taken the title of Viscount Stansgate. This further step in a distinguished public career has been widely welcomed, and by none more cordially than those associated with the business in which he served his apprenticeship. Lord Stansgate was at one time an active member of the family firm of Benn Brothers, Limited, proprietors of THE CHEMICAL AGE. At the beginning of the last war, Wedgwood Benn deliberately suspended his already successful political career in order to join the Middlesex Yeomanry, with whom he fought in Gallipoli. He was then seconded to the Royal Naval Air Service, qualifying as a pilot and serving with such marked success that he was awarded the D.S.O., the D.F.C., and many foreign decorations, including the Legion of Honour and the Croix de Guerre. In 1939, though over 60 years of age, he went back with enthusiasm into the Royal Air Force, and for nearly two years he gave tireless service, with the rank of Squadron Leader. He has now been granted the acting rank of Air Commodore on taking up the important appointment of Director of Public Relations at the Air Ministry.

Obituary

SIR JEREMIAH COLMAN, chairman of J. and J. Colman, Ltd., mustard manufacturers, died on January 16 at Gatton Park, Reigate, Surrey, aged 82.

LIEUT. R. L. ROACH, of Newport, Monmouthshire, who is reported killed in action in the Far East, was a field chemist with the Burmah Oil Co., Ltd., before the war, and was in Assam when hostilities began.

LORD BERKELEY, who died at Berkeley Castle, Gloucestershire on January 15, aged 76, was an eminent scientist and a Fellow of the Royal Society, to whose journals (as well as to other periodicals) he contributed articles on physico-chemical subjects, notably osmotic problems, in the first decade of this century.

MR. LIONEL LEIGH-SMITH, M.A., F.I.C., who died on January 19 at Hindhead, Surrey, aged 69, had been employed for many years, until his retirement, at the Government Cordite Factory, Madras, S. India. A graduate of Cambridge University, he became a Fellow of the Institute of Chemistry in 1908, and had specialised in the chemistry of explosives.

New Control Orders

Barium Minerals, Felspar, Talc, etc.

UNDER a Board of Trade Order (S.R. and O. 1942, No. 36) which comes into force on February 3, licences will, in future, be required to export, to all destinations: adhesives and sizes the main ingredient used in the manufacture of which (water excepted) is starch or dextrine; asbestine; barium carbonate; barium sulphate, including blanc fixe; barytes; witherite; felspar; talc, steatite, and soapstone; cores consisting wholly or mainly of iron powder; and inorganic fluorine compounds

Gum damar and fluorspar, the exportation of which without licence was previously prohibited to certain destinations only, will, in future, require licences for *all* destinations.

Derris Root

By the Control of Derris (No. 1) Order, 1942 (S.R. and O. 1942, No. 51) the Minister of Supply orders that derris root, whether whole, ground, or mixed with other roots, shall not be acquired, disposed of, treated, or consumed, except under licence. The Order came into force on January 16.

Antimony

The Minister of Supply has made the Control of Non-Ferrous Metals (No. 8) (Antimony) Order, 1942, which came into force on January 19, 1942. Under this Order, no person may dispose of any antimony without a licence or acquire any antimony except from the holder of a licence. Antimony includes any antimony metal containing not less than 75 per cent. by weight of antimony and any crude antimony sulphide, antimony oxide, golden or crimson sulphide of antimony, or antimony ore. Persons requiring antimony should continue to place their orders through the normal channels. Any further inquiry on matters arising out of the Order (S.R. & O. 1942, No. 48) should be addressed to the Joint Controllers of Non-Ferrous Metals, Grand Hotel, Rugby.

ARSENIC IMPORTER-DISTRIBUTORS

An Association of Importer-Distributors of Arsenic is being formed to handle the distribution of all supplies of this material. The term "importer-distributor" is defined as a person who (a) purchased arsenic from an overseas source of supply and (b) distributed arsenic, either directly or indirectly, to consumers. Any person who carried out both these functions in any part of the period January 1, 1938, to June 30, 1941, is eligible for membership of the Association. Supplies will be allotted for distribution on a quota basis. All communications should be addressed to Messrs. Thomson McLintock and Co., Granite House, 97 Cannon Street, London, E.C.4.

Acid-Resisting Wood

Its Advantages and Limitations

THE number of species of wood that can be employed to contain corrosive chemicals is very limited, and there is no known timber that can be used regularly to contain caustic alkalis and nitric acid without detriment. The acid-resisting properties of wood depend largely on the structure of the microscopic cells in the wood, which determines its degree of permeability. The lignin and cellulose are very resistant to acids other than nitric, but are much less resistant to alkalis. The softwoods withstand the action of alkalis much longer than the hardwoods, although teak is exceptional in being one of the few hardwoods with any great resistance to alkalis, a feature resulting from its peculiar cell anatomy with a high lignin and cellulose content.

It is chiefly sulphuric and hydrochloric acid and their salts that can be stored in containers made of acid-resisting wood. The list of such woods is almost confined to American Louisiana gulf cypress, American and British Douglas fir, New Zealand kauri pine, Burmese and Indian teak, and Algerian satinwood or ayan. Despite a tradition to the contrary, oak is not durable when used in contact with acids, although like elm it is a very suitable timber for the conveyance or storage of water. Kauri pine has seen a wide success in the past decade in the construction of chemical and dyers' vats, for it is relatively non-absorbent of water. It is the most durable conifer, a resinous wood free from knots and defects, only moderately heavy, and easily worked.

Pitch pine is often assumed to be a useful wood for resisting acids, but in point of fact it is not always suitable, and when used to contain hot liquid, its abundance of resin, which otherwise helps to protect the wood fibres against acids, will ooze out of the wood, thus leading to an high degree of shrinking.

Considerable damage may be done to wood vats by changing their chemical contents. For example, if a wooden chemical vat used to store acids is drained and subsequently used to hold caustic soda without any intermediate treatment or washing, the abilities of the wood will be very seriously damaged because the acid has made it much more readily soluble in the alkali than would otherwise have been the case.

The subject of wood chemistry has been dealt with in a couple of admirable modern papers: Campbell's "Chemical Aspect of Timber Research" (*J.S.C.I.*, 1935) and Lovelace's notes in the *Industrial Chemist* in 1932. The choice of wood for any particular purpose involving chemical operations is not always an easy matter, and in case of doubt it is always wise to obtain the advice of specialists in wood chemistry or to consult the records in the chemistry section of the Forest Products Research Laboratory of the Department of Scientific and Industrial Research, accessible by arrangement. The proportions of cellulose, lignin and hemicelluloses in the cell appear to exert the main influence upon the acid-resisting properties of various woods.

Some woods themselves are corrosive, it must be remembered. For example, oak gives off acetic acid which will have a corrosive effect upon any iron or lead in contact with the oak. This explains why, after a number of years, sheet lead coverings to oak timbers are reduced to white, powdered, basic lead carbonate, unless the oak is charred before use.

War-time economy in the use of corrosion-resisting metals, and indeed, the difficulty of obtaining such metals, has extended the interest in acid-resisting timbers. But as these woods have also to be imported, it may be possible to overcome difficulties by building storage tanks or vats or cheaper wood lined with thinner linings of acid-resisting metal.

General News—From Week to Week

One box for rifle cartridges can be made from twelve old letters, and one cartridge wad from one old envelope. Saved paper helps along the munitions drive.

The Minister of Supply has made the Control of Tins, Cans, Kegs, Drums, and Packaging Pails (No. 5) Order, 1942, which is now in force. This consolidates previous orders and extends the No. 4 Order to cover sheet-steel containers.

State bursaries in science, instituted last year to meet the demand for technical officers for the armed forces and for war industry, will be continued in 1942. Bursaries will be awarded in engineering, physics and chemistry.

The Vice-Chancellor of Cambridge University announces that the Iron and Steel Industrial Research Council has increased its grant for research on corrosion fatigue, under the direction of Dr. U. R. Evans, from £1250 to £1850 for the year 1942.

The following have been elected members of the Society of Public Analysts: N. S. J. Bebington, K. Burrow, A. J. C. Cosbie, W. Furness, A. J. Kidney, H. C. Macfarlane, J. G. Rimmer, S. A. Rossell, A. Sherlock, G. Thomas, and Mrs. D. J. Wolfsohn.

Fines and costs amounting to £3978 were adjudged at Southend County Court last week against Morris Abramofsky, of Wickford, and William M. Kemp, of Canvey Island. The two men, who were said to have made a profit of £1100 in five weeks on the sale of 230 tons of molasses belonging to the Ministry of Supply, which had been stolen from an Essex wharf, pleaded "Guilty" to 24 summonses concerning the acquisition and disposal of the molasses, nine of which alleged that they had sold it at sums varying between £6 and £18 a ton, although the maximum price was £4 17s. 6d. a ton.

Azozol (Hexazole) (4-cyclohexyl-3-ethyl-1 : 2 : 4-triazole), a British-made product introduced by Boots Pure Drug Co., Ltd., is the same as the German preparation "Azoman," to which it is equal in all respects. It is supplied as a 5 per cent. solution for the shock (convulsive) treatment of schizophrenia and for use as an analeptic.

Output of fluorspar, lead, and barytes from North-East England could be increased, according to Professor Granville Poole, mining expert at King's College, Newcastle, who said that the North-East was fairly rich in mineral deposits, and suggested that the Government should assist in their exploitation.

Only one concern of industrial chemical importance is contained in the latest list of 192 persons and firms in neutral countries with whom it is illegal to trade—the Trading with the Enemy (Specified Persons) (Amendment) (No. 1) Order, 1942. This the Sociedade de Industria Quimica "Sicla" (F. Arditti & Cia.), Caixa Postal 70, Santo André, S. Paulo, Brazil.

The National Institute of Industrial Psychology, whose annual report was issued last Saturday, has just completed twenty-one years' work. Founded at the end of the last war for the study of the psychological aspects of occupational problems, the Institute has since advised some ten thousand young and older people on their choice of occupation. The outstanding feature of the present twenty-first year has been increased general recognition of the principles which the Institute has advocated. During the year the Institute's investigators have been busy with the selection of operatives, methods of reducing absenteeism, the organisation of works councils, etc.

The prospects of greater use being made of Cornish tin appear to be improving, and Lord Portal, Parliamentary Secretary to the Ministry of Supply, has written to Mr. Beechman, M.P., for St. Ives, stating that " . . . the position has now changed to the extent that the potentialities of tin production which can be made effective within the course of twelve months are being immediately reviewed. It is recognised that tin has now become a matter of great urgency." Lord Portal further states that two wolfram schemes and one arsenic scheme are also being developed. It is not expected, however, that much could be achieved within a year by the re-opening of long disused mines, although experts are of the opinion that much could be done by a more extensive working of the existing mines.

Foreign News

Sufficient bauxite to meet Australian aluminium requirements for at least 100 years, says Reuter, has been discovered in a survey carried out by the Commonwealth Copper and Bauxite Committee.

The Phelps-Dodge Corporation announces increased production and wider use in the United States of a silicon bronze alloy, replacing tin in bearings and similar industrial products, according to a Reuter report.

According to reports emanating from Rome, " 100 new concerns " are to be created in Italy for the manufacture of synthetic resin, asbestos, chemical fuel and other products of which there is a shortage.

A new company known as the Hungarian Plastics and Chemicals Factory Co., with a capital of 2,000,000 pengö, has been formed in Budapest for the production of synthetic resins, synthetic wax, artificial leather and synthetic rubber.

All Uruguayan imports of metals and chemical products for the entire country are now to be made only by the Bank of the Republic, which is charged with the obtainment of export licences in the exporting country.

The Castle Dome Copper Company, Inc., of New York, has been given a contract to provide facilities at Miami, Ariz., for an annual production of 46 million lb. of electrolytic copper. Cost of the plant will be approximately $9,000,000.

Synthetic phenol is to be produced at a new plant scheduled to be constructed for the General Electric Co. at a site near Pittsfield, Mass., U.S.A. The estimated cost is about $1,000,000; the plant is expected to go into operation by September, and will supply three-quarters of the company's present requirements.

Technical preparations for the establishment of a nitrogen industry in Denmark have now been completed. Plant construction is expected to cost about 200 million kroner, of which 45 million are to be used for the nitrogen works proper and 70 million for a coke-oven plant.

A new corporation, with a capital of 400,000 bolivares, has been formed in Caracas, Venezuela, for the production of liquid chlorine, caustic soda, and similar products. Application for purchase of the necessary equipment in the United States has already been filed.

Properties of Ameripol D synthetic rubber are listed in a new catalogue issued by the B.F. Goodrich Co., Akron, Ohio, U.S.A. Comparisons with other synthetic materials and with natural rubber are included, and copious illustrations of products made with Ameripol D are provided.

Of the 12 iron and chromite mines in Guatemala for the exploitation of which concessions had been granted to the International Railways of Central America, 10 are being abandoned. Only the Corona and La Gringa mines, both in Jalapa Department, have proved to be worth working.

Magnesite exports from South Africa totalled 7804 short tons in the first half of 1941, as compared with 5161 in January-June, 1940. These go solely to the United Kingdom, but as the United Kingdom is reported to have discontinued the importation of the magnesite, the mines may suspend operation.

Chromite export statistics from New Caledonia, recently published, throw an interesting light on certain aspects of war production: Germany, which took none of the exports up to 1937, absorbed 7315 metric tons in 1938 and 13,513 in 1939. In 1940, the German quota reverted to zero, but the U.S.A., which had taken 18,892 tons in 1939, increased this amount to 55,394.

The output of petroleum in Argentina during the first nine months of 1941 reached the record total of 2,572,111 cubic metres, compared with 2,408,057 cubic metres in the corresponding period of 1940. The production of State oilfields increased, but the output of privately-owned wells was lower.

The President of the Chilean Nitrate Corporation in New York has stated that he calculates that the U.S.A. will require 850,000 tons of pure nitrogen during the current nitrate year. Chile will, therefore, be called upon to increase its production of nitrate of soda, provided that transport facilities can be improved, according to reports received in London.

The principal rubber, oil, and chemical companies of the United States, with the support of the Reconstruction Finance Corporation, have arranged to construct plants with a capacity for producing 400,000 tons of synthetic rubber a year. The expected cost of the undertaking is $400,000,000. The companies concerned have agreed to pool all their patents and technical processes.

As a large-scale producer of tin, tungsten, and antimony, China is likely to play an important part in the proposed Inter-Allied War Supply Council. China has helped the United States in the past by supplying these materials, and arrangements to expedite their export are expected to follow the formation of the proposed council. New refineries for all three metals are being set up at various centres of production.

To meet the need for information on the construction of copper tanks, vats, and containers, the Copper and Brass Research Association has recently established an industrial research project in the Division of Metallurgy of the U.S. National Bureau of Standards. All the data assembled will be correlated with the basic engineering principles of construction and the whole made available to designers and builders.

A decree has been signed in Brazil creating a National Fuel and Lubricants Board, which is empowered to co-ordinate the general policy of the Government for the production and distribution of combustibles and lubricants. The Board includes representatives of the National Petroleum Council, the Sugar and Alcohol Institute, the National Gas-Producer Board and the Mining and Metallurgical Council.

Orders for 80,000 tons of fodder from sulphate cellulose have been placed by the Swedish Government with four firms (Mo & Domsjö, Stora Kopparberg, Cellulosebolaget, Iggesund). The material has been tested in the state livestock institute where experiments have proved that it is approximately equal in feeding value to fodder from sulphite cellulose. The sulphate fodder will be sold to farmers at a price of 0.12 kronor per kilogram.

Forthcoming Events

Edinburgh and East of Scotland Sections of the **Society of Chemical Industry** and **Institute of Chemistry** will meet on **January 28,** at 7.30 p.m., at the North British Station Hotel, Princes Street, Edinburgh, to hear Professor R. D. Haworth speak on " Synthetical Investigations in the Natural Resin Field."

Mr. G. F. Lothian, M.A., F.Inst.P., will speak on " Fluorescence Measurement " before a meeting of the London Section of the **Society of Chemical Industry,** on **February 2,** at 2.15 p.m., in the Rooms of the Chemical Society, Burlington House, W.1.

" Fluorescent Lighting " is the title of a paper to be delivered by Mr. H. G. Jenkins, of the research laboratories of the General Electric Co., Ltd., Wembley, at the **Royal Society of Arts,** John Adam Street, Adelphi, W.C.2., on **February 4,** at 1.45 p.m.

A meeting of the **Society of Public Analysts and Other Analytical Chemists** is to be held at 3.30 p.m., on **February 4,** at the Chemical Society's Rooms, Burlington House, Piccadilly, W.1, when among the four papers to be presented and discussed will be one by G. J. Austin, entitled, " Adsorption of Metals of the Iron Group in Analysis."

The Birmingham Paint, Varnish, and Lacquer Club will meet on the afternoon of **February 7,** at the Grand Hotel, Birmingham, to hear Mr. C. W. A. Mundy, A.I.C., speak on " Dehydrated Castor Oil—Fact and Fiction."

Inventions in the Chemical Industry

The following information is prepared from the Official Patents Journal. Printed copies of Specifications accepted may be obtained from the Patent Office, 25 Southampton Buildings, London, W.C.2, at 1s. each. The numbers given under "Applications for Patents" are for reference in all correspondence up to the acceptance of the Complete Specification.

Applications for Patents

Treatment of rosin.—Hercules Powder Co. (United States Sept. 16, '40.) 11812.

Power-transmission devices.—Imperial Chemical Industries, Ltd. (Du Pont de Nemours and Co.). 11771.

Manufacture of polymerisable materials.—Imperial Chemical Industries, Ltd. (Du Pont de Nemours and Co.). 11772.

Treatment of paper.—Imperial Chemical Industries, Ltd. (Du Pont de Nemours and Co.). 11773.

Manufacture of hydrocarbon compounds.—Imperial Chemical Industries, Ltd. (Du Pont de Nemours and Co.). 11897.

Coating compositions.—Imperial Chemical Industries, Ltd. (Du Pont de Nemours and Co.). 11898.

Manufacture of alcoholates.—Imperial Chemical Industries, Ltd. (Du Pont de Nemours and Co.). 11899.

Recovering magnesium from finely divided magnesium, etc. International Alloys, Ltd., and W. E. Prytherch. 11881.

Regeneration of contact masses.—International Catalytic Oil Processes Corporation. (United States, Sept. 14, '40.) 11671.

Treating hydrocarbon fluids.—International Catalytic Oil Processes Corporation. (United States, Sept. 14, '40.) 11672.

Method and apparatus for contacting solids and gases.—International Catalytic Oil Processes Corporation. (United States, Sept. 26, '40.) 11802. (United States, Sept. 28, '40.) (Cognate with 11802.) 11803. (United States, Oct. 5, '40.) (Cognate with 11802.) 11804. (United States, Dec. 27, '40.) (Cognate with 11802.) 11805.

Conversion of hydrocarbon oils.—International Catalytic Oil Processes Corporation. (United States, Sept. 14, '40.) 11806.

Antidote for use against noxious gases.—T. D. Kelly. 11675.

Process for obtaining sulphuric acid.—E. Krebs and Cie. (Italy, Feb. 14.) 11777.

Manufacture of sodium percarbonate.—B. Laporte, Ltd., and W. S. Wood. 11695.

Inhibition of corrosion of magnesium and magnesium base alloys.—Magnesium Elektron, Ltd., and C. J. Bushrod. 11846.

Chemical manufacture.—Mathieson Alkali Works. (United States, Sept. 18, '40.) 11928.

Apparatus for indicating the presence of gases, etc.—H. T. Ringrose. 11641.

Preparation of β-substituted homologues of indole.—Sir R. Robinson, R. H. Harradence, Stafford, Allen and Sons, Ltd., and T. F. West. 11703.

Manufacture of yeast growth-promoting substances.—Roche Products, Ltd., F. Bergel, A. L. Morrison and N. C. Hindley. 11943.

Remote-control apparatus.—Rubery Owen Messier, Ltd., and R. Hadekel. 11940.

Catalytic conversions in the presence of ferrous metals.—Shell Development Co. (United States, Sept. 9, '40.) 11721. (United States, May 3.) (Cognate with 11721.) 11722.

Dehydrohalogenation of halohydrins.—Shell Development Co. (United States, Sept. 17, '40.) 11723.

Manufacture of vat dyestuffs.—Soc. of Chemical Industry in Basle. (Switzerland, Sept. 19, '40.) 11905. (Switzerland, April 30.) (Cognate with 11905.) 11906. (Switzerland, July 18.) (Cognate with 11905.) 11907.

Production of water gas, etc.—M. Steinschlaeger. 11810.

Fluid-pressure indicators.—A. Gould-Sullings. 11665.

Lubricating systems.—A. Gould-Sullings. 11817.

Treatment of thin hardened artificial protein materials.—R. H. K. Thomson and Imperial Chemical Industries, Ltd. 11685.

Method of flaking lead.—W. W. Triggs (Metals Disintegrating Co., Inc.). 11709.

Production of aromatic compounds.—W. Weizmann. 11852.

Manufacture of explosives.—J. Whetstone and Imperial Chemical Industries, Ltd. 11775, 11776.

Nitriles, and polymers thereof.—Wingfoot Corporation. (United States, Nov. 29, '40.) 11710.

Dihalo acids.—Wingfoot Corporation. (United States, May 10.) 11711.

Complete Specifications Open to Public Inspection

Wet process for the manufacture of sheets, felts and mats of glass wool.—Vetrocoke (Firm of). June 23, 1939. 336/40.

Polymerisation processes.—Standard Oil Development Co. April 20, 1940. 2730/41.

Manufacture of pour depressants and like products.—Standard Oil Development Co. April 20, 1940. 4105/41.

Refractories and methods of making the same.—Titanium Alloy Manufacturing Co. April 18, 1940. 4233/41.

Manufacture of solutions of polyvinyl chlorides.—Soc. des Usines Chimiques Rhône-Poulenc. April 15, 1940. 4869/41.

Magnetic alloys and permanent magnets made therefrom.—Mond Nickel Co., Ltd. April 18, 1940. 4915/41.

Unwoven fibrous sheets.—American Re-enforced Paper Co. April 16, 1940. 4963/41.

Production of halogenated benzoic esters.—British Thomson-Houston Co., Ltd. April 17, 1940. 4964/41.

Complete Specifications Accepted

Preparation of aqueous dispersions of highly-polymerised organic substances.—G. W. Johnson (I. G. Farbenindustrie). July 16, 1938. 539,476.

Devices for indicating and/or controlling the specific gravity of liquids.—Aktiebolaget Latex. June 13, 1938. (Cognate application, 17144/39.) 539,384.

Manufacture of esters.—Soc. of Chemical Industry in Basle. Sept. 16, 1938. (Cognate applications, 25837/39 and 25838/39.) 539,506.

Processes and apparatus for coating by dipping metal strands with metals.—Synero Machine Co. Jan. 19, 1939. 539,479.

Process for the conversion of hydrocarbons.—Standard Oil Co. Dec. 31, 1938. 539,385.

Manufacture of normally-liquid hydrocarbons by alkylation. Standard Oil Development Co. Dec. 7, 1938. (Cognate application, 29937/39.) 539,480.

Manufacture of resins and of coating compositions containing such resins.—Standard Oil Development Co. Dec. 31, 1938. (Addition to 511,418.) 539,416.

Fertilisers and their application.—Soc. of Chemical Industry in Basle. Dec. 20, 1938. (Cognate application, 31702/39.) 539,507.

Production of acyclic condensation products of acetylene.—Distillers Co., Ltd., H. P. Staudinger and K. H. W. Tuerck. Jan. 6, 1940. 539,417.

Refining of liquid hydrocarbons.—South Metropolitan Gas Co., P. C. Bishop, R. A. Procter, and R. F. Twist. Feb 5, 1940. 539,455.

Fluorescent paints.—C. Z. Holub. March 5, 1940. 539,396.

Method and apparatus for electrically-pickling stainless steels. F. B. Dehn (Sharon Steel Corporation). March 5, 1940. 539,424.

Aluminium base alloys.—National Smelting Co. April 21, 1939. 539,456.

Gas producers.—C.U.R.A. Patents, Ltd., and J. S. Hales. March 7, 1940. (Cognate application, 8396/40.) 539,440.

Process of preparing 21-aldehydes of the cyclopentanopolyhydrophenanthrene series.—N. V. Organon. April 6, 1939. (Cognate application, 4316/40.) 539,441.

Separation of acetone and cyclic ethers.—British Celanese, Ltd. March 11, 1939. 539,487.

Oxidation of alcohols to produce aldehydes.—British Celanese Ltd. March 11, 1939. 539,488.

Manufacture of ruby glass.—E. I. du Pont de Nemours and Co. March 10, 1939. 539,514.

Manufacture of chlorinated rubber.—D. E. Woods, H. Dodd, and Imperial Chemical Industries, Ltd. March 11, 1940. 539,489.

Production of low-carbon alloys.—I. Rennerfelt and B. M. S. Kalling. March 11, 1939. 539,461.

Conversion of powdered or subdivided magnesium or magnesium alloys into coherent form.—W. B. Hamilton. March 12, 1940. 539,516.

Manufacture of cellulose esters.—British Celanese, Ltd. March 15, 1939. 539,518.

Deseaming or desurfacing metal bodies.—Linde Air Products Co. April 22, 1939. 539,470.

Naphthalene derivatives and method of obtaining same.—L. Mellersh-Jackson (Parke, Davis and Co.). March 27, 1940. 539,471.

Bonding of refractory material.—O. G. Bennett and L. B. Berger. April 18, 1939. 539,474.

Manufacture of heterocyclic compounds with high molecular aliphatic or alicyclic substituents, and more especially of water-soluble compounds of this nature.—J. R. Geigy A.-G. April 26, 1939. 539,404.

Process for the manufacture of an azo dyestuff from para-amino-phenyl-arsonic acid.—E. A. H. Friedheim. April 26, 1939. 539,528.

Weekly Prices of British Chemical Products

ACTIVITY in the general chemicals market during the past week has been fairly widespread, and nearly all sections report strong price conditions. There has been practically no alteration in the general supply position, and makers' deliveries against contracts are reported to be satisfactory. Amongst the potash products permanganate is firm and in good request, whilst supplies of both caustic potash and bichromate of potash are none too plentiful. In the soda products section both grades of hyposulphite are in steady demand, whilst there has been no change in the position of yellow prussiate of soda and chlorate of soda, offers of both items being scarce. Makers' prices for citric and tartaric acids are unchanged, but there is little material available of either product. Oxalic acid continues strong. A fair activity is reported from the coal tar products market, interest being mainly centred on creosote oil and carbolic acid. Toluols and xylols are moving steadily, but pitch is a quiet market.

MANCHESTER.—From the point of view of contract deliveries fairly steady trading conditions are reported on the Manchester chemical market this week with regard to the movement into consumption of supplies for use in the textile dyeing and finishing trades, whilst most other classes of users are calling for good quantities. Fresh inquiries this week have been fairly frequent, though traders state that it is not always possible to meet requirements, especially where early deliveries are specified. The position of the tar products generally is unchanged, but in the case of xylol, values are slightly easier if anything, and new business has fallen off.

GLASGOW.—In the Scottish heavy chemical trade there has been a steady day-to-day business in the home market during the past week. Export trade is extremely limited. Prices remain extremely firm and in many instances increases have already taken place.

Price Changes

Rises: Ammonium sulphate, antimony sulphide, carbolic acid, chrometan, chromic acid, copper sulphate, cream of tartar, cresylic acid, glycerine, india rubber substitutes, lead acetate, red lead, white lead, potash caustic, potassium permanganate, sodium metasilicate, sodium phosphate, tartaric acid, vermilion.

Falls: Carbon black, vegetable lamp black.

General Chemicals

Acetic Acid.—Maximum prices per ton: 80% technical, 1 ton £39 10s.; 10 cwt./1 ton, £40 10s., 4/10 cwt., £41 10s.; 80% pure, 1 ton, £41 10s.; 10 cwt./1 ton, £42 10s.; 4/10 cwt., £43 10s.; commercial glacial, 1 ton, £49; 10 cwt./1 ton, £50; 4/10 cwt., £51; delivered buyers' premises in returnable barrels, £4 10s. per ton extra if packed and delivered in glass.

Acetone.—Maximum prices per ton, 50 tons and over, £65; 10/50 tons, £65 10s.; 5/10 tons, £66; 1/5 tons, £66 10s.; single drums, £67 10s.; delivered buyers' premises in returnable drums or other containers having a capacity of not less than 45 gallons each. For delivery in non-returnable containers of 40/50 gallons, the maximum prices are £3 per ton higher. Deliveries of less than 10 gallons free from price control.

Alum.—Loose lump, £10 10s. per ton, d/d, nominal.

Aluminium Sulphate.—£10 15s. per ton d/d.

Ammonia Anhydrous.—1s. 9d. to 2s. 3d. per lb.

Ammonium Carbonate.—£32 to £39 per ton d/d in 5 cwt. casks.

Ammonium Chloride.—Grey galvanising, £22 10s. per ton, in casks, ex wharf. Fine white 98%, £19 10s. per ton. See also Salammoniac.

Antimony Oxide.—£95 to £110 per ton.

Arsenic.—99/100%, £36 per ton, ex store.

Barium Chloride.—98/100%, prime white crystals, £11 10s. to £13 per ton, bag packing, ex works; imported material would be dearer.

Bleaching Powder.—Spot, 35/37%, £11 per ton in casks, special terms for contract.

Borax, Commercial.—Granulated, £31 10s.; crystals, £32 10s.; powdered, £33; extra fine powder, £34; B.P. crystals, £40 10s.; powdered, £41; extra fine, £42 per ton for ton lots, in free 1-cwt. bags, carriage paid in Great Britain. Borax Glass, lump, £83; powder, £84 per ton in tin-lined cases for home trade only, packages free, carriage paid.

Boric Acid.—Commercial, granulated, £52 15s.; crystals, £53 15s.; powdered, £54 15s.; extra fine powder, £56 15s.; B.P. crystals, £61 15s.; powdered, £62 15s.; extra fine powdered, £64 15s. per ton for ton lots in free 1-cwt. bags, carriage paid in Great Britain.

Calcium Bisulphite.—£6 10s. to £7 10s. per ton f.o.r. London.

Calcium Chloride.—70/72% solid, £5 15s. per ton ex store.

Charcoal Lump.—£10 10s. to £14 per ton, ex wharf. Granulated, supplies scarce.

Chlorine, Liquid.—£22 7s. 6d. per ton, d/d in 16/17 cwt. drums (3-drum lots); 5½d. per lb. d/d station in single 70-lb. cylinders.

Chrometan.—Crystals, 5½d. per lb.; liquor, £24 10s. per ton d/d station in drums.

Chromic Acid.—1s. 3d. per lb., less 2½%, d/d U.K.

Citric Acid.—1s. 5½d. per lb., normal; imported material, 1s. 10d. per lb. MANCHESTER: 1s. 8d. per lb.

Copper Oxide.—Black, £95 per ton.

Copper Sulphate.—About £30 10s. per ton f.o.b. MANCHESTER: £30 10s., less 2%, in 5 cwt. casks f.o.b. Liverpool.

Cream of Tartar.—100%, £17 2s. per cwt., less 2½%, d/d in sellers' returnable casks.

Formaldehyde.—£21 15s. to £25 per ton d/d. MANCHESTER: 40%, £22 to £25 per ton in casks d/d; imported material dearer.

Formic Acid.—85%, £47 per ton for ton lots, carriage paid; smaller parcels quoted up to 50s. per cwt., ex store.

Glycerine.—Chemically pure, double distilled 1260 s.g., in tins, £4 to £5 per cwt., according to quantity; in drums, £3 12s. 6d. to £4 6s. Refined pale straw industrial, 5s. per cwt. less than chemically pure.

Hexamine.—Technical grade for commercial purposes, about 1s. 4d. per lb.; free-running crystals are quoted at 2s. 1d. to 2s. 3d. per lb.; carriage paid for bulk lots.

Hydrochloric Acid.—Spot, 6s. 3½d. to 8s. 9½d. carboy d/d, according to purity, strength and locality.

Hydrofluoric Acid.—59/60%, about 6d. per lb.

Iodine.—Resublimed B.P., 9s. 11d. to 13s. 11d. per lb., according to quantity.

Lactic Acid.—Dark tech., 50% by vol., £40 10s. per ton. Not less than one ton lots ex works; barrels returnable, carriage paid.

Lead Acetate.—White, £51 to £53 ton lots. MANCHESTER: £48 to £50 per ton.

Lead Nitrate.—About £46 10s. per ton d/d in casks.

Lead, Red.—English, 5/10 cwt., £47 10s.; 1 cwt. to 1 ton, £47 5s.; 1/2 tons, £47; 2/5 tons, £46 10s.; 5/20 tons, £46; 20/100 tons, £45 10s.; over 100 tons, £45 per ton, less 2½ per cent., carriage paid; non-setting red lead 10s. per ton dearer in each case.

Lead, White.—Dry English, less than 5 tons, £55; 5/15 tons, £51; 15/25 tons, £50 10s.; 25/50 tons, £50; 50/200 tons, £49 10s. per ton, less 5 per cent., carriage paid; Continental material, £1 per ton cheaper. Ground in oil, English, 1/5 cwt., £66 10s.; 5/10 cwt., £65 10s.; 10 cwt. to 1 ton, £65; 1/2 tons, £63 10s.; 2/5 tons, £62 10s.; 5/10 tons, £60 10s.; 10/15 tons, £59 10s.; 15/25 tons, £59; 25/50 tons, £58 10s.; 50/100 tons, £58 per ton, less 5 per cent., carriage paid.

Litharge.—1 to 2 tons, £43 per ton.

Lithium Carbonate.—7s. 9d. per lb. net.

Magnesite.—Calcined, in bags, ex works, £18 15s. to £22 15s. per ton.

Magnesium Chloride.—Solid (ex wharf), £12 to £13 per ton. MANCHESTER: £13 to £14 per ton.

Magnesium Sulphate.—Commercial, £10 to £12 per ton, according to quality, ex works.

Mercury Products.—Controlled price for 1 cwt. quantities: Bichloride powder, 11s. 7d.; bichloride lump, 12s. 2d.; ammon. chloride powder, 13s. 5d.; ammon. chloride lump, 14s.; mercurous chloride, 13s. 9d.; mercury oxide, red cryst., B.P., 15s.; red levig. B.P., 15s. 6d.; yellow levig. B.P., 14s. 9d.; yellow red, 14s. 4d.; sulphide, red, 12s. 11d.

Methylated Spirit.—Industrial 66° O.P. 100 gals., 2s. 4d. per gal.; pyridinised 64° O.P. 100 gals., 2s. 5d. per gal.

Nitric Acid.—£23 to £31 per ton ex works.

Oxalic Acid.—£60 to £65 per ton for ton lots, carriage paid, in 5-cwt. casks; smaller parcels would be dearer; deliveries slow.

Paraffin Wax.—Nominal.

Potash, Caustic.—Basic price for 50-100 ton lots. Solid, 88/92%, commercial grade, £55 7s. 6d. per ton, c.i.f. U.K. port, duty paid. Broken, £5 extra; flake, £7 10s. extra; powder, £10 extra per ton. Ex store, £3 10s. supplement.

Potassium Bichromate.—Crystals and granular, 7½d. per lb.; ground, 8½d. per lb., for not less than 6 cwt.; 1-cwt. lots, ½d. per lb. extra.

Potassium Carbonate.—Basic prices for 50 to 100 ton lots; **calcined, 98/100%, £58 per ton, c.i.f. U.K. port. Ex warehouse, £3 10s. extra per ton.**

Potassium Chlorate.—Imported powder and crystals, ex store London, 2s. per lb., nominal.

Potassium Iodide.—B.P., 8s. 8d., to 12s. per lb., according to quantity.

Potassium Nitrate.—Small granular crystals, £40 to £45 per ton ex store, according to quantity.

Potassium Permanganate.—B.P., 1s. 10d. per lb. for 1 cwt. lots; for 3 cwt. and upwards, 1s. 9½d. per lb.; technical, £7 18s. 6d. to £8 10s. 6d. per cwt., according to quantity d/d.

Potassium Prussiate.—Supplies scarce, prices nominal.

Salammoniac.—First lump, spot, £48 per ton; dog-tooth crystals, £50 per ton; medium, £48 10s. per ton; fine white crystals, £19 10s. per ton. in casks, ex store.

Soda, Caustic.—Solid 76/77%; spot, £15 7s. 6d. per ton d/d station.

Sodium Acetate.—£40 per ton, ex wharf.

Sodium Bicarbonate (refined).—Spot, £11 per ton, in bags.

Sodium Bichromate.—Crystals, cake and powder, 5¾d. per lb., anhydrous, 6d. per lb., net d/d U.K.

Sodium Bisulphite Powder.—60/62%, £18 15s. per ton d/d in 2-ton lots for home trade.

Sodium Carbonate Monohydrate.—£21 per ton d/d in minimum ton lots in 2 cwt. free bags.

Sodium Chlorate.—£36 to £45 per ton, d/d, according to quantity.

Sodium Hyposulphite.—Pea crystals, £19 15s. per ton for 2-ton lots; commercial £14 15s. per ton. MANCHESTER: Commercial, £14 10s.; photographic, £19 15s.

Sodium Iodide.—B.P., for not less than 28 lb., 9s. 6d. per lb.; for not less than 7 lb., 13s. 1d. per lb.

Sodium Metasilicate.—£16 per ton, d/d U.K. in 1-ton lots.

Sodium Nitrate.—Refined, £15 5s. per ton for 6-ton lots d/d.

Sodium Nitrite.—£24 10s. per ton for ton lots.

Sodium Perborate.—10%, £5 2s. per cwt.

Sodium Phosphate.—Di-sodium, £23 to £25 per ton d/d for ton lots. Tri-sodium, £25 to £30 per ton d/d for ton lots.

Sodium Prussiate.—From 7¼d. per lb. ex store.

Sodium Silicate.—£9 15s. per ton, for 4-ton lots.

Sodium Sulphate (Glauber Salts).—£4 10s. ton d/d.

Sodium Sulphate (Salt Cake).—Unground. Spot £4 8s. 6d. per ton d/d station in bulk. MANCHESTER: £4 13s. 6d. per ton d/d station.

Sodium Sulphide.—Solid 60/62%. Spot, £17 15s. per ton d/d in drums; crystals, 30/32%, £11 15s. per ton d/d in casks.

Sodium Sulphite.—Anhydrous, £29 10s. per ton; Pea crystals, spot, £19 10s. per ton d/d station in kegs; commercial, £13 15s. per ton d/d stations in bags.

Sulphur.—Finely powdered, £17 10s. to £19 per ton d/d; precip. B.P., 68s. per cwt.

Sulphuric Acid.—168° Tw., £6 10s. to £7 10s. per ton; 140° Tw., arsenic-free, £4 11s. per ton; 140° Tw., arsenious, £4 3s. 6d. per ton. Quotations naked at sellers' works.

Tartaric Acid.—4s. 3½d. per lb., less 5%, carriage paid for lots of 5 cwt. and upwards. MANCHESTER: 4s. 3½d. to 4s. 4d. per lb.

Tin Oxide.—Snow white, £14 5s. to £14 15s. per cwt.

Zinc Oxide.—Maximum prices: White seal, £30 17s. 6d. per ton; red seal, £28 7s. 6d. d/d; green seal, £29 17s. 6d. d/d.

Zinc Sulphate.—Tech., £20-£21 per ton, carriage paid, casks free.

Rubber Chemicals

Antimony Sulphide.—Golden, 1s. 2d. to 2s. 2d. per lb. Crimson, 2s. 6d. to 2s. 7d. per lb.

Arsenic Sulphide.—Yellow, 1s. 10d. to 2s. per lb.

Barytes.—Best white bleached, £8 3s. 6d. per ton.

Cadmium Sulphide.—5s. 9d. to 6s. 6d. per lb.

Carbon Black.—5½d. to 7⅝d. per lb., according to packing.

Carbon Bisulphide.—£35 5s. to £40 5s. per ton, according to quantity, in free returnable drums.

Carbon Tetrachloride.—£46 to £49 per ton.

Chromium Oxide.—Green, 1s. 6d. per lb.

India-rubber Substitutes.—White, 6½d. to 9½d. per lb.; dark, 5 9/16d. to 6 3/16d. per lb.

Lithopone.—30%, £25 per ton; 60%, £31 to £32 per ton. Imported material would be dearer.

Mineral Black.—£7 10s. to £10 per ton.

Mineral Rubber, "Rupron."—£20 per ton.

Sulphur Chloride.—7d. per lb.

Vegetable Lamp Black.—£48 per ton.

Vermilion.—Pale or deep, 13s. 8d. per lb. for 30 lb. lots.

Plus 5% War Charge.

Nitrogen Fertilisers

Ammonium Phosphate Fertilisers.—Type B, £13 18s. 9d. per ton in 6-ton lots, d/d farmer's nearest station in January.

Ammonium Sulphate.—Per ton in 6-ton lots, d/d farmer's nearest station; January, £9 19s.; February, £10 0s. 6d.; March/June, £10 2s.

Calcium Cyanamide.—Nominal; supplies very scanty.

Concentrated Complete Fertilisers.—£14 8s. 9d. per ton in 6-ton lots d/d farmer's nearest station in January. Supplies small except C.C.F. Special.

"Nitro Chalk."—£9 14s. per ton in 6-ton lots, d/d farmer's nearest station in January.

Sodium Nitrate.—Chilean super-refined for 6-ton lots d/d nearest station, £15 5s. per ton; granulated, over 98%, £14 10s. per ton. Surcharges for smaller quantities unless collected at warehouse or depote.

Coal Tar Products

Benzol.—Industrial (containing less than 2% of toluol), 2s. to 2s. 2d. per gal., ex works.

Carbolic Acid.—Crystals, 9½d. to 11½d. per lb.; Crude, 60's 3s. 3d. to 4s. 6d., according to specification. MANCHESTER: Crystals, 9⅜d. to 11½d. per lb., d/d; crude, 4s. to 4s. 6d., naked, at works.

Creosote.—Home trade, 6½d. to 9d. per gal., f.o.r., maker's works; exports 6d. to 6½d. per gal., according to grade. **MANCHESTER: 6½d. to 9d. per gal.**

Cresylic Acid.—Pale, 99/100%, 5s. 6d. per gal. MANCHESTER: Pale, 99/100%, 5s. 4d. per gal.

Naphtha.—Solvent, 90/160°, 2s. 6d. to 2s. 10d. per gal.; Heavy 90/190°, 1s. 10½d., naked at works. MANCHESTER: 90/160°, **2s. 6d. to 2s. 10d.**

Naphthalene.—Crude, whizzed or hot pressed, £11 3s. to £11 8s. per ton; purified crystals, £19 to £36 per ton in 2-cwt. bags; flaked, £28 to £35 per ton. Fire-lighter quality, £7 10s. to £9 10s. per ton ex works. MANCHESTER: Refined, £19 to £38 per ton.

Pitch.—Medium, soft, nominal, f.o.b. MANCHESTER: Nominal.

Pyridine.—90/140°, 18s. per gal.; 90/160°, 14s.; MANCHESTER: 14s. to 18s. 6d. per gal.

Toluol.—Pure, 2s. 5d. nominal; 90's, 1s. 10d. per gal. **MANCHESTER: Pure, 2s. 5d. per gal. naked.**

Xylol.—Commercial, 3s. 6d. per gal.; pure, 3s. 9d. MANCHESTER: 3s. 3d. to 3s. 8d. per gal.

Wood Distillation Products

Calcium Acetate.—Brown, £21 per ton; grey, £24. MANCHESTER: Grey, £25 to £26 per ton.

Methyl Acetone.—40.50%, £54 per ton.

Wood Creosote.—Unrefined, 2s. per gal., according to boiling range.

Wood Naphtha, Miscible.—4s. 6d. to 5s. per gal.: solvent, 5s. per gal.

Wood Tar.—£4 to £5 per ton, according to quality.

Intermediates and Dyes (Prices Nominal)

m-**Cresol** 98/100%.—Nominal.
o-**Cresol** 30/31° C.—Nominal.
p-**Cresol** 34/35° C.—**Nominal.**
Dichloraniline.—2s. 8½d. per lb.
Dinitrobenzene.—8½d. per lb.
Dinitrotoluene.—48/50° C., 9½d. per lb.; 66/68° C., 1s.
p-**Nitraniline.**—2s. 5d. per lb.
Nitrobenzene.—Spot, 5½d. per lb., in 90-gal. drums, drums extra, 1-ton lots d/d buyer's works.
Nitronaphthalene.—1s. 2d. per lb.; P.G., 1s. 0½d. per lb.
o-**Toluidine.**—1s. per lb., in 8/10 cwt. drums, drums extra.
p-**Toluidine.**—2s. 2d. per lb., in casks.
m-**Xylidine Acetate.**—4s. 5d. per lb., 100%.

Latest Oil Prices

LONDON.—JANUARY 21.—For the period ending February 7, per ton, net, naked, ex mill, works or refinery, and subject to additional charges according to package and location of supplies:—LINSEED OIL, raw, £41 10s. RAPESEED OIL, crude, £46 5s. COTTONSEED OIL, crude, £31 2s. 6d.; washed, £34 5s.; refined edible, £35 12s. 6d.; refined deodorised, £36 10s. SOYA BEAN OIL, crude, £33; refined deodorised, £37. COCONUT OIL, crude, £28 2s. 6d.; refined deodorised, £31 7s. 6d. PALM KERNEL OIL, crude, £27 10s.; refined deodorised, £30 15s. PALM OIL, refined deodorised, £37; refined hardened deodorised, £41. GROUNDNUT OIL, crude, £35 10s.; refined deodorised, £40. WHALE OIL, crude hardened, 42 deg., £30 10s.; refined hardened, 42 deg., £33. ACID OILS.—Groundnut, £19; **soya, £17; coconut and palm kernel, £22 10s.** ROSIN, 26s. 6d. **to 33s. per cwt., ex wharf, according to grade.** TURPENTINE, American, 90s. per cwt., in drums or barrels, as imported (controlled price).

Commercial Intelligence

The following are taken from printed reports, but we cannot be responsible for errors that may occur.

Mortgages and Charges

(Note.—The Companies Consolidation Act of 1908 provides that every Mortgage or Charge, as described therein, shall be registered within 21 days after its creation, otherwise it shall be void against the liquidator and any creditor. The Act also provides that every company shall, in making its Annual Summary, specify the total amount of debt due from the company in respect of all Mortgages or Charges. The following Mortgages and Charges have been so registered. In each case the total debt, as specified in the last available Annual Summary, is also given—marked with an *—followed by the date of the Summary, but such total may have been reduced.)

ELECTRONIC RESEARCH LABORATORIES, LTD., London, W.C. (M., 24/1/42.) December 26, £1000 debentures; general charge. *Nil. January 14, 1941.

P. B. COW AND CO., LTD., London, S.W., rubber manufacturers. (M., 24/1/42.) December 26, charge, to National Provincial Bank, Ltd., securing all moneys due or to become due to the Bank; charged on contract moneys. *£114,250. August 6, 1941.

STONART ASBESTOS FLOORING CO., LTD., London, E.C. (M., 24/1/42.) December 26, £100 debentures, part of a series already registered. *Nil. May 8, 1941.

Satisfaction

BRITISH DIESEL OIL AND PETROL CO., LTD. (formerly L.T.C. Distillates, Ltd.), Gawber. (M.S., 24/1/42.) Satisfaction, December 26, of debenture registered April 4, 1938, to the extent of £6000.

Companies Winding-Up Voluntarily

ASBESTOLINE, LTD. (C.W.U.V., 24/1/42.) By special resolution, January 8. Rodway Stephens, King William Street House, Arthur Street, London, E.C.4, appointed liquidator.

ENGLISH GELATINE AND PHOSPHATES, LTD. (C.W.U.V., 24/1/42.) By special resolution, January 1. William John Maltman, I.C.I. (General Chamicals), Ltd., Castner-Kellner Works, Runcorn, Cheshire, appointed liquidator.

Company News

Northern Counties Laboratory, Ltd., 4, Fenchurch Avenue, E.C.3, has changed its name to United Analysts, Ltd.

English China Clays, Ltd., is paying a dividend of 7 per cent. on the cumulative preference shares for the nine months ended December 31, but is passing the dividend on the ordinary shares.

New Companies Registered

Arsenic Distributors, Ltd. (371,766).—Private company. Capital: £500 in 500 shares of £1 each. Manufacturers, importers, and exporters of arsenic, etc. Subscribers: J. C. Burleigh and J. M. Dallas. Registered Office: 101 Cannon Street, E.C.4.

B. H. Chemicals, Ltd. (371,833).—Private company. Capital: £1000 in 600 shares of £1 each and 1600 shares of 5s. each. Manufacturers of and dealers in chemicals, lubricants, soaps, unguents, detergents, emulsions, etc. Subscribers: E. Harris and M. E. Oliver. Solicitor: Mrs. V. M. Prockter, 8 Stone Buildings, Lincoln's Inn, W.C.2.

Chemical and Allied Stocks and Shares

IN the absence of improvement in demand, the general price trend in Stock Exchange markets has been slightly reactionary on balance, the disposition being to await the next turn of war developments in Malaya and the Far East. There was, however, again increased demand for British Funds, which continued to show an upward tendency, and where changed, most good class investment stocks were higher. On the other hand, although there were rather sharp fluctuations in a number of instances, industrial shares had a quieter appearance, but very little selling was reported.

A firm feature was provided by Imperial Chemical, which at 33s. 3d. were unchanged on balance, sentiment being aided by continued market anticipations that the dividend may be kept on an 8 per cent. basis. I.C.I. 7 per cent. preference units held their rise to 35s. Lever and Unilever at 30s. 6d. have reacted 6d. on balance. There has been continued activity in United Molasses, which at 31s. 6d. lost most of an earlier rise, but were 6d. better on the week. The market attaches little credence to rumours of possible merger developments with the Distillers Co. The ordinary shares of the last-named company at 75s. 3d. have held most of their earlier advance. The Far Eastern war news affected Dunlop Rubber, which have been lowered to 29s. at the time of writing, and there was a decline in various oil shares for a similar reason. Burmah Oil moved back from 52s. 6d. to 49s. 4½d. "Shell" were 49s. 6d., compared with 53s. 9d. a week ago.

Borax Consolidated deferred were steady and unchanged at 30s. 6d., awaiting the results, which fall to be issued next month. As usual, W. J. Bush shares remained firmly held and they rarely come on the market in any amount; in this case the interim dividend announcement is usually made in February. Monsanto Chemicals 5½ per cent. preference were again quoted at 22s. 6d.; the report and accounts are due in March. Elsewhere, B. Laporte were firm but inactive, and were quoted at 63s. 9d. Fison Packard at 36s. 10½d. were unchanged on balance. British Match at 34s. 6d. were also a steady feature. Among shares of companies with interests in plastics, British Industrial Plastics 2s. ordinary were little changed at 3s. 3d., and Erinoid 5s. ordinary transferred at close on 8s.; Catalin 5s. shares were dealt in at 2s. 6d. Activity continued to be shown in British Plaster Board, which, despite minor fluctuations, were unchanged on balance at 22s. Associated Cement were 52s. 6d., and Turner and Newall at 70s. 6d. were virtually unchanged on balance. Moreover, British Oxygen remained firm at 67s. 6d., and British Aluminium at 45s. were little changed as compared with a week ago. The dividend announcement of the last-named company is usually made in March.

There was a little selling of Triplex Glass shares following last week's rise, the quotation being 32s. 1½d. at the time of writing. United Glass Bottle were firm around 57s., market expectations being that the dividend may very well be maintained. Among other glass companies, results of Jackson Bros. (of Knottingley) are due shortly. As usual, Morgan Crucible preference shares remained firmly held. In other directions, Nairn and Greenwich were unchanged at 57s. 6d., following the statements at the annual meeting, but Barry and Staines were 33s. 3d. compared with 33s. 6d., and at 26s. 3d. Wall Paper Manufacturers deferred units were also slightly lower than a week ago.

Boots Drug had a steady appearance at 36s. 6d., while, awaiting the forthcoming results, the shares of Southalls (Birmingham) remained very firmly held. Sangers were 17s. 6d. "ex" the interim dividend, and Timothy Whites had an easier appearance at 20s. 1½d. Beechams Pills deferred had a steady tendency at 10s. 3d., and British Drug Houses were again 25s. Iron and steel issues were little changed, with Tube Investments 86s., Stewarts and Lloyds 46s., and Dorman Long 20s. 3d. Following their recent improvement, moderate profit-taking was more in evidence in Bradford Dyers and other textile issues. Courtaulds declined a few pence to 35s. 3d.; the preliminary results are expected towards the end of next month or early in March.

LIMITING RE-SALES OF GOODS

The Board of Trade has, after consultation with the Central Price Regulation Committee, made an Order limiting, except under licence, the sale of price-controlled goods to one wholesale and one retail transaction. An exception is made in favour of re-sales at prices not exceeding those paid by the seller; and a wholesaler is afforded a defence against a charge of infringement of the Order if he can prove that the re-sale was in accordance with an established pre-war usage of his trade. Price-controlled goods cover all price-regulated goods under the Prices of Goods Act, 1939, and goods which are subject to Maximum Orders under the Goods and Services (Price Control) Act, 1941. Traders who consider their business should be safeguarded by a licence should apply to the Industries and Manufactures Department, Division 1, Board of Trade, Millbank, London, S.W.1, before February 7, if their position has not in the meantime been covered by a general licence. The Order, the Price Controlled Goods (Restriction of Re-sale) Order, 1942 (S.R. and O. 1942, No. 64) came into force on January 19.

Save Paper. 6 old books = 1 mortar shell carrier.

Wanted from

TRANSPORT USERS

100,000 EXTRA WAGONS AND LORRIES TO BEAT THE BLACKOUT

THIS fact must be faced—long hours of blackout slow down transport dangerously. Yet the need for more wagons and lorries is vital—to carry men and munitions, food and fuel, to serve the many urgent needs of a nation at war.

We can't beat the blackout by *making* more vehicles; we haven't the labour, the materials nor the time to spare. The only solution to the problem is to speed up the running time of the wagons and lorries now in use. If, over the whole country, a mere 15 per cent. saving were made by cutting down standstill and increasing running time, the equivalent of 100,000 extra vehicles would come into existence immediately.

Are you sure you are doing *your* share in getting a Quicker Turnround?

Ask yourselves these questions

1—Have you planned to make labour available to load or discharge immediately? Have you arranged to load to capacity?

2—Have you installed labour-saving equipment to speed up loading and unloading? If this is not possible, have you improvised?

3—Do you help consignees by informing them, as far as you can, when the goods you forward may be expected to arrive?

4—Are your arrangements between your office and your loading staff as good as they should be? For instance, have you arranged for the immediate checking of loads?

5—Have you talked the matter over with the men who actually load and unload?

6—Do you make the most of every hour of daylight to clear loads, carrying on into the blackout when possible?

WORK FOR

Quicker Turnround

SPEED UP LOADING AND UNLOADING

Issued by the Ministry of War Transport

CLASSIFIED SECTION

NOTE: Trade announcements, other than strictly second-hand and job lines, cannot be inserted in these pages except by firms whose advertisements run in the display columns

2d. per word; minimum 18 words; 3 or more insertions, 1½d. per word per insertion. (Sixpence extra is charged when replies are addressed to Box Numbers.)

APPOINTMENTS VACANT

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